IPM 11/12
Course Projects

Licenciatura em Ciência de Computadores

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Details on course projects

- Group project:
  - Recommended: 3 students
  - Different group sizes are only possible if validated by the lecturer.
- Two components:
  - Written report – 50%
  - Software implementation – 50%

Scenario for this work

- You have a small company that does HCI design and implementation.
- I have a big company that needs an HCI task and has money to 'buy it'.
- Your course project is to provide a solid proposal that will make me buy the HCI solution from your company.
  - How is this proposal?

Proposal - Report

- You need to convince me to invest in your solution.
- First: Write a report where you have studied the problem and propose a solution:
  - What is the objective of the work, the available technology, and who are the end-users?
  - Given this, what are my 'killer ideas'?
- Deadline: 26th October

Proposal – Prototype

- I am hard to convince!
- Second: Produce a prototype that convinces me that your ‘killer ideas’ will work!
  - Does not need to be a finished product.
  - Needs to demonstrate that the HCI is adequate.
  - I expect a graphical interface with a well-defined API, that could be ‘attached’ to a working version of the full software.

Summing up – Project Details

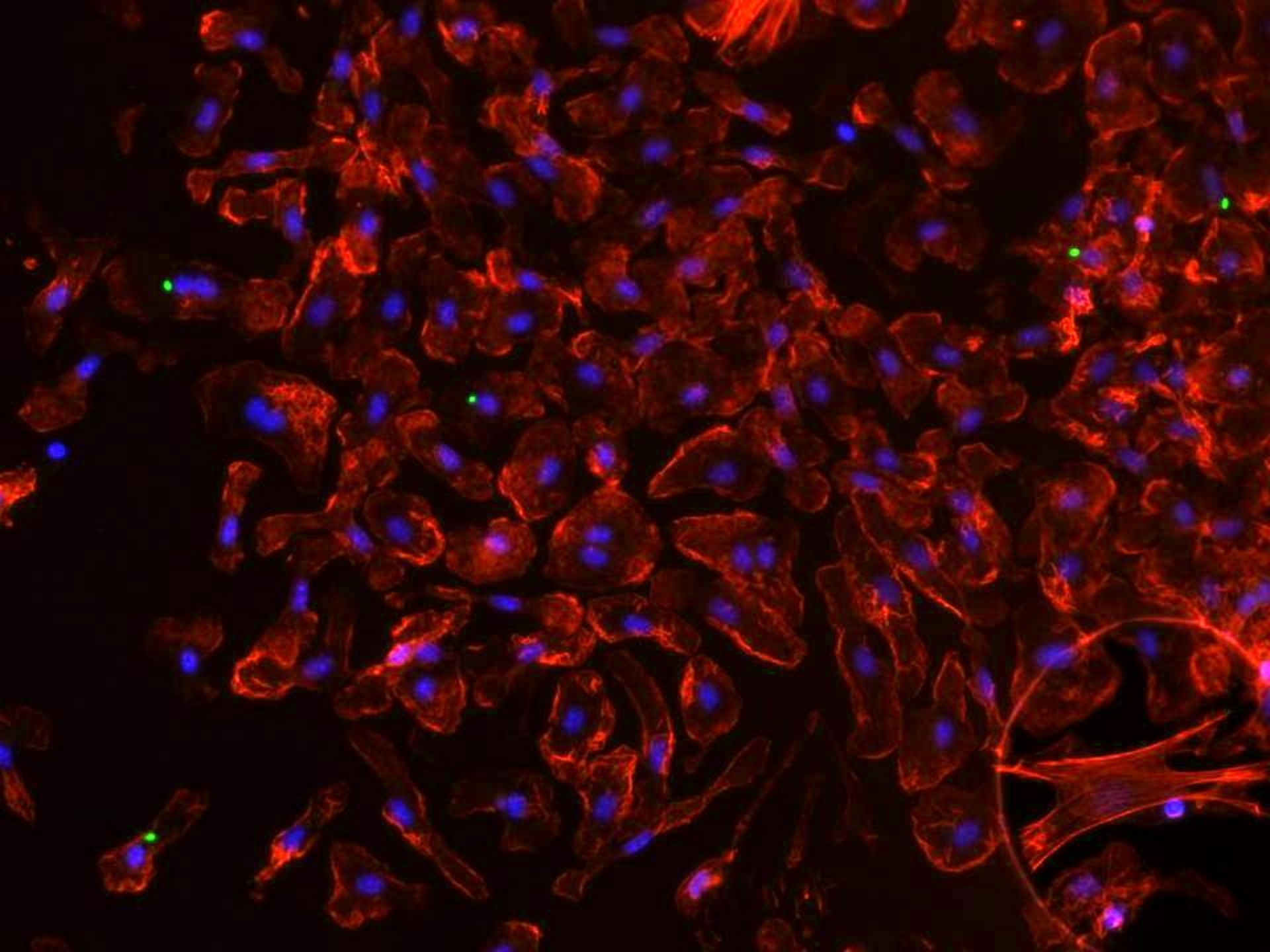
- Sell me your solution.
  - Report – Pdf File
  - Prototype
    - JAVA (AWT or Swing)
    - Others
- Questions?

Project topics

- I will give you some possible topics for your course project.
- You can suggest your own topics, but I need to validate them.
- Characteristics of a topic:
  - Has well defined target users, objectives and available technology .
  - Can be prototyped using JAVA or other available technologies.

Topic 1: CellNote

- Software for Assisted Biology Research
  - Biologists make (lots and lots of) experiments.
  - They need to assess results.
  - Typically: Manual counting!
- What can we do?
  - Software that maximizes their efficiency.
  - HCI Methodologies!
- Test scenario: Leishmania research at IBMC



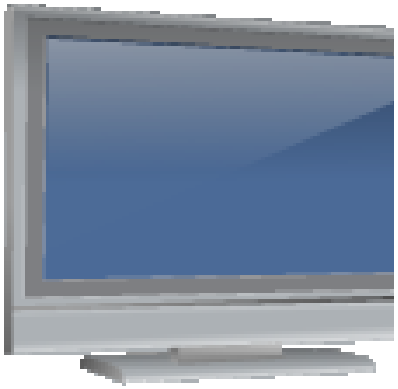
Details

- Objective:
  - Provide an efficient way to annotate cellular imaging data using a touch paradigm
- Target user:
  - Biologists
- Available technology:
  - Tablet PC (Asus EEE PC Transformer)

Topic 2: CAGE

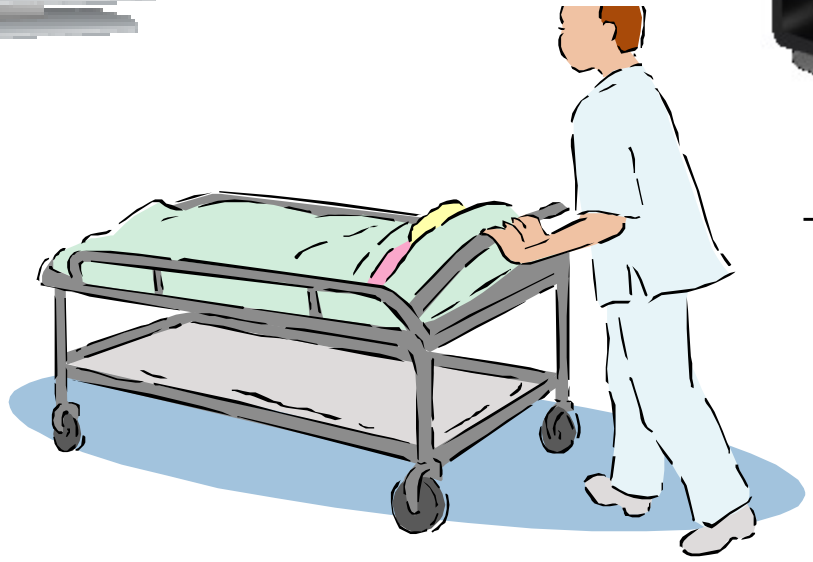
- **C**omputer **A**ssisted **G**astroenterology **E**xamination
  - GE rooms have state of the art imaging technology (HD cameras and screens).
  - However: Simply used as a live video stream.
- What if:
  - We can have a small tablet next to the physician, in which he can interact with the big HD screen?
- Potential for:
  - Computer Assisted Decision
  - Training environment for clinicians

Gastroenterology tomorrow



-Real-time video feed
-Patient information
-CAD – Computer Assisted Decision
-Similar exams
-Atlas queries
-…

Superior Real-Time Interaction:
-Gestures
-Voice commands
- Touch-based interaction



What does this mean?
-**Improved diagnostic capabilities**
-**Improved training capabilities**
-**Faster reporting**

Details

- Objective:
  - Study interactive solutions for enhanced information access inside (GE) gastroenterology exam rooms
- Target user:
  - Gastroenterologists
- Available technology:
  - Tablet PC next to the patient's bed

Topic 3: DigiScope

- What if digital stethoscopes can screen cardiac pathologies?
- Build an effective interactive system that can be used by a doctor to:
  - View and listen to auscultations
  - View important information obtained from audio processing
  - Screen cardiac pathologies
- As transparently as possible!

DigiScope prototype

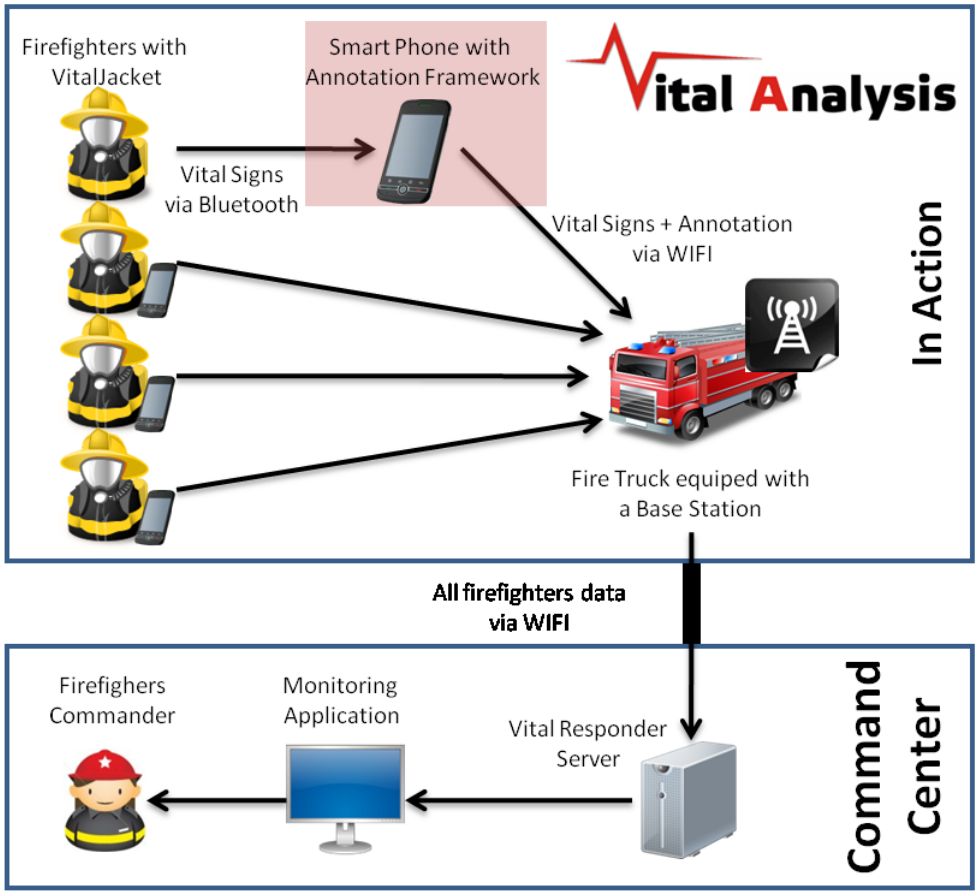
Details

- Objective:
  - Build an interactive system for screening cardiac pathologies based on auscultation
- Target user:
  - Physicians (not necessarily cardiologists)
- Available technology:
  - Smartphone

Topic 4: VR Browsing Station

- We can collect vital signs from firemen
  - GPS, accs, ECG, stress questionaires, event details.
- Build an effective interactive system that can be used by a firemen team leader:
  - Review all data associated with an event
  - Associate with geographic positioning
  - Profile his team members

Vital Responder



Details

- Objective:
  - Build an interactive system for reviewing event details such as vital signs and activities
- Target user:
  - Firemen team leaders
- Available technology:
  - Touch-based Tablet PC

Summing up – Project Topics

- Various different proposed topics.
- No problem if several groups choose the same topic.
- If you don't like them feel free to propose one!
  - Problem? Technology? Target users?
  - Each new topic needs my validation!

Discussion

- Create groups by next week (compulsory).
- Choose / Propose a topic (highly recommended to do it quickly!).

- Questions?